

U.S. Patent Appln. No. 09/890,550
Amendment
Response to Office Action of Oct. 28, 2004

Docket No. 2000-22

REMARKS

The foregoing amendments and these remarks are in response to the Final Office Action dated October 28, 2004. This amendment is accompanied by a Request for a Retroactive Extension of Time and authorization to charge Deposit Account No. 50-0951 for the appropriate fees.

At the time of the Office Action, claims 43-54 were pending in the application. In the Office Action, claims 47 and 52 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting. Claims 47 and 52 were rejected under 35 U.S.C. §102(a). Claims 43-46, 50 and 51 are allowed. Claims 48, 49, 53 and 54 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form. The rejections are discussed in more detail below.

I. Double Patenting Rejection

Claims 47 and 52 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-34 of co-pending Application No. 10/018,708. Applicant traverses this rejection.

The co-pending application does not disclose a plurality of bonded base materials, each formed from a silicon carbide-metal composite having a thermal conductivity of 100W/m K or more. Rather, claim 2 of the co-pending application recites a plurality of superimposed bases, each base being formed from a silicon-carbide sinter. Accordingly, the present invention is not obvious over the co-pending application. Withdrawal of the rejection is respectfully requested.

II. Rejections to the claims based upon Art

Claims 47 and 52 were rejected under 35 U.S.C. §102(a) as being anticipated by WO 99/38651. Applicant traverses this rejection.

WO99/38651 does not disclose a plurality of bonded base materials, each formed from a silicon carbide-metal composite having a thermal conductivity of 100W/m K or more. Rather, WO99/38651 teaches that only the upper two plates 30 and 34 are made of a highly thermally conductive material such as SiC having a thermal conductivity of 0.07 cal/cm/s/°C (i.e., 70W/m K) (see page 9, lines 15-21 of WO99/38651). The third plate 38 and the lower plate 44 do not

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need to have particularly high conductivity, and "in fact, lower thermal conductivity of stainless steels is desirable to prevent temperature changes in the thermal medium flowing therethrough" (see page 9, lines 21-25 of WO99/38651). Accordingly, claim 47 is distinguished over WO99/38651, which teaches a thermal conductivity of 70W/mk or less, and that it is desirable to form the plates of different materials.

The table of WO99/38651 cannot sufficiently avoid bending of a wafer due to thermal stress and overheating of a table even if the circular groove-shaped temperature adjustment fluid passages 32a, 32b, 32c, 32d, 32e are provided on the top surface of the second plate 34. This is because the object of WO99/38651 is different from the present invention. The object of WO99/38651 is to uniform polishing temperature on a polishing table 12, which is achieved by the plates 34, 44 each made of SiC of a highly thermally conductive material, the fluid passages 32a, 32b, 32c, 32d, 32e formed on the plate 34, and a plurality of thermocouples 52a, 52b, 52c, 52d, 52e used to control the temperature of the polishing table 12. In contrast, an object of the present application is to improve the thermal conductivity of a table to thereby avoid bending of a wafer due to thermal stress and overheating of a table, which is achieved by the plurality of bonded base materials, each formed from a silicon carbide-metal composite having a thermal conductivity of 100W/m K or more, and a fluid passage formed in a bonding interface of the base materials. Accordingly, it is apparent the thermal conductivity of the present invention (100W/m K or more) is superior than that of WO99/38651 (70W/m K or less).

III. Allowable Subject Matter

Claims 43-46, 50 and 51 are allowed. Claims 48, 49, 53 and 54 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. As claim 47 is believed allowable, claims dependent upon claim 47 are not amended herein.

IV. Conclusion

Applicants have made every effort to present claims which distinguish over the prior art, and it is thus believed that all claims are in condition for allowance. Nevertheless, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic interview would


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expedite the prosecution of the application to an allowance. In view of the foregoing remarks, Applicants respectfully request reconsideration and prompt allowance of the pending claims.

Respectfully submitted,

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